



## Complete Summary

---

### TITLE

Acute myocardial infarction: percent of patients with left ventricular systolic dysfunction and without angiotensin converting enzyme inhibitor contraindications who are prescribed an angiotensin converting enzyme inhibitor at discharge.

### SOURCE(S)

Acute myocardial infarction core performance measures. In: Specifications manual for national implementation of hospital core measures. Oakbrook Terrace (IL): Joint Commission on Accreditation of Healthcare Organizations (JCAHO); 2002 July. p. AMI-1 to AMI-9-6.

Center for Medicare and Medicaid Services (CMS). 7th statement of work (SOW). Quality of care measure specifications: Acute myocardial infarction (AMI). Baltimore (MD): Center for Medicare and Medicaid Services (CMS); 2002 Aug 1. Various p.

## Brief Abstract

### DESCRIPTION

This measure assesses the percentage of acute myocardial infarction (AMI) patients with left ventricular systolic dysfunction (LVSD) and without angiotensin converting enzyme inhibitor (ACEI) contraindications who are prescribed an ACEI at hospital discharge. For purposes of this measure, LVSD is defined as chart documentation of a left ventricular ejection fraction (LVEF) less than 40% or a narrative description of left ventricular function (LVF) consistent with moderate or severe systolic dysfunction.

This measure represents an alignment of Centers for Medicare and Medicaid Services and Joint Commission on Accreditation of Health Care Organizations measures. As such, some attributes characterized in this NQMC summary may be attributable to either or both organizations.

### RATIONALE

Angiotensin converting enzyme inhibitor (ACEI) therapy reduces mortality and morbidity in patients with left ventricular systolic dysfunction (LVSD) after acute myocardial infarction (AMI). In addition, the likelihood of a recurrent myocardial infarction may also be reduced. Clinical trials have established that the use of ACEI initiated after recovery from an AMI improves long-term survival, with greater treatment benefit in patients with anterior infarctions or LVSD. National guidelines strongly recommend ACEI for patients hospitalized with AMI. Despite

these recommendations, ACEIs remain underutilized in older patients hospitalized with AMI.

#### PRIMARY CLINICAL COMPONENT

Acute myocardial infarction; left ventricular systolic dysfunction; angiotensin converting enzyme inhibitor

#### DENOMINATOR DESCRIPTION

Acute myocardial infarction (AMI) patients with left ventricular systolic dysfunction (LVSD) and without angiotensin converting enzyme inhibitor (ACEI) contraindications (see the related "Denominator Inclusions/Exclusions" field in the Complete Summary)

#### NUMERATOR DESCRIPTION

Acute myocardial infarction (AMI) patients who are prescribed an angiotensin converting enzyme inhibitor (ACEI) at hospital discharge

### Evidence Supporting the Measure

#### PRIMARY MEASURE DOMAIN

Process

#### SECONDARY MEASURE DOMAIN

Not applicable

#### EVIDENCE SUPPORTING THE MEASURE

A clinical practice guideline or other peer-reviewed synthesis of the clinical evidence

A formal consensus procedure involving experts in relevant clinical, methodological, and organizational sciences

A systematic review of the clinical literature

One or more research studies published in a National Library of Medicine (NLM) indexed, peer-reviewed journal

#### NATIONAL GUIDELINE CLEARINGHOUSE LINK

- [1999 update: ACC/AHA guidelines for the management of patients with acute myocardial infarction. A report of the American College of Cardiology/American Heart Association Task Force on Practice Guidelines \(Committee on Management of Acute Myocardial Infarction\).](#)

## Evidence Supporting Need for the Measure

### NEED FOR THE MEASURE

Overall poor quality for the performance measured

### EVIDENCE SUPPORTING NEED FOR THE MEASURE

Jencks SF, Cuerdon T, Burwen DR, Fleming B, Houck PM, Kussmaul AE, Nilasena DS, Ordin DL, Arday DR. Quality of medical care delivered to Medicare beneficiaries: A profile at state and national levels. JAMA 2000 Oct 4;284(13):1670-6. [PubMed](#)

## State of Use of the Measure

### STATE OF USE

Current routine use

### CURRENT USE

Accreditation  
Collaborative inter-organizational quality improvement  
Internal quality improvement

## Application of Measure in its Current Use

### CARE SETTING

Hospitals

### PROFESSIONALS RESPONSIBLE FOR HEALTH CARE

Measure is not provider specific

### LOWEST LEVEL OF HEALTH CARE DELIVERY ADDRESSED

Single Health Care Delivery Organizations

### TARGET POPULATION AGE

Age greater than or equal to 18 years

### TARGET POPULATION GENDER

Either male or female

### STRATIFICATION BY VULNERABLE POPULATIONS

Unspecified

## Characteristics of the Primary Clinical Component

### INCIDENCE/PREVALENCE

Each year 900,000 people in the United States (U.S.) are diagnosed with acute myocardial infarction (AMI); of these, approximately 225,000 cases result in death and, it is estimated that an additional 125,000 patients die before obtaining medical care.

### EVIDENCE FOR INCIDENCE/PREVALENCE

American College of Cardiology, American Heart Association Task Force on Practice Guidelines, Committee on Management of Acute Myocardial Infarction. Ryan TJ, Antman EM, Brooks NH, Califf RM, Hillis LD, Hiratzka LF, Rapaport E, Riegel B, Russell RO, Smith EE III, Weaver WD. ACC/AHA guidelines for the management of patients with acute myocardial infarction: 1999 Update. Bethesda (MD): American College of Cardiology (ACC), American Heart Association (AHA); 1999. Various p.

### ASSOCIATION WITH VULNERABLE POPULATIONS

Unspecified

### BURDEN OF ILLNESS

Cardiovascular disease, including acute myocardial infarction (AMI), is the leading cause of death in the United States (U.S.).

### EVIDENCE FOR BURDEN OF ILLNESS

French WJ. Trends in acute myocardial infarction management: use of the National Registry of Myocardial Infarction in quality improvement. Am J Cardiol 2000 Mar 9;85(5A):5B-9B; discussion 10B-12B. [PubMed](#)

### UTILIZATION

Cardiovascular disease, including acute myocardial infarction (AMI), is the primary disease category for hospital patient discharges.

### EVIDENCE FOR UTILIZATION

French WJ. Trends in acute myocardial infarction management: use of the National Registry of Myocardial Infarction in quality improvement. Am J Cardiol 2000 Mar 9;85(5A):5B-9B; discussion 10B-12B. [PubMed](#)

### COSTS

Unspecified

## Institute of Medicine National Healthcare Quality Report Categories

### IOM CARE NEED

Getting Better

### IOM DOMAIN

Effectiveness

## Data Collection for the Measure

### CASE FINDING

Users of care only

### DESCRIPTION OF CASE FINDING

Discharges, 18 years and older, with a principal diagnosis of acute myocardial infarction (AMI)

### DENOMINATOR (INDEX) EVENT

Clinical Condition  
Institutionalization

### DENOMINATOR INCLUSIONS/EXCLUSIONS

#### Inclusions

Discharges with an International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) Principal Diagnosis Code for acute myocardial infarction (AMI) and chart documentation of a left ventricular ejection fraction (LVEF) less than 40% or a narrative description of left ventricular function (LVF) consistent with moderate or severe systolic dysfunction

#### Exclusions

- Patients less than 18 years of age
- Patients transferred to another acute care hospital
- Patients who expired
- Patients who left against medical advice
- Patients discharged to hospice
- Patients with chart documentation of participation in a clinical trial testing alternatives to angiotensin converting enzyme inhibitors (ACEIs) as first-line heart failure therapy
- Patients with one or more of the following ACEI contraindications/reasons for not prescribing ACEI documented in the medical record:
  - ACEI allergy;
  - Moderate or severe aortic stenosis;

- Other reasons documented by a physician, nurse practitioner, or physician assistant for not prescribing ACEI at discharge.

Refer to the original measure documentation for details.

#### NUMERATOR INCLUSIONS/EXCLUSIONS

##### Inclusions

Acute myocardial infarction (AMI) patients who are prescribed an angiotensin converting enzyme inhibitor (ACEI) at hospital discharge

##### Exclusions

Unspecified

Refer to the original measure documentation for details.

#### DENOMINATOR TIME WINDOW

Time window is a single point in time

#### NUMERATOR TIME WINDOW

Encounter or point in time

#### DATA SOURCE

Administrative and medical records data

#### LEVEL OF DETERMINATION OF QUALITY

Individual Case

#### PRE-EXISTING INSTRUMENT USED

Unspecified

### Computation of the Measure

#### SCORING

Rate

#### INTERPRETATION OF SCORE

Better quality is associated with a higher score

#### ALLOWANCE FOR PATIENT FACTORS

Unspecified

## STANDARD OF COMPARISON

External comparison at a point in time  
External comparison of time trends  
Internal time comparison

## Evaluation of Measure Properties

### EXTENT OF MEASURE TESTING

The core measure pilot project was a collaboration among the Joint Commission, five state hospitals associations, five measurement systems, and 83 hospitals from across nine states. Participating hospitals collected and reported data for acute myocardial infarction (AMI) measures from December 2000 to December 2001.

Core measure reliability visits were completed the summer of 2001 at a random sample of 16 participating hospitals across 6 states.

Preliminary data gathered from the pilot project shows a mean measure rate of 83% indicating an opportunity for improvement.

### EVIDENCE FOR RELIABILITY/VALIDITY TESTING

Joint Commission on Accreditation of Healthcare Organizations (JCAHO). A comprehensive review of development and testing for national implementation of hospital core measures. [internet]. Oakbrook Terrace (IL): Joint Commission on Accreditation of Healthcare Organizations (JCAHO); 2002 [cited 2002 Nov 13]. [8 p].

Joint Commission on Accreditation of Healthcare Organizations (JCAHO). Information on final specifications for national implementation of hospital core measures as of 11/04/02. [internet]. Oakbrook Terrace (IL): Joint Commission on Accreditation of Healthcare Organizations (JCAHO); 2002 Nov 04 [cited 2002 Nov 13]. [10 p].

Joint Commission on Accreditation of Healthcare Organizations (JCAHO). Overview of the acute myocardial infarction (AMI) core measure set. [internet]. Oakbrook Terrace (IL): Joint Commission on Accreditation of Healthcare Organizations (JCAHO); 2002 Mar 22 [cited 2002 Nov 13]. [4 p].

## Identifying Information

### ORIGINAL TITLE

ACEI for LVSD.

### MEASURE COLLECTION

[Centers for Medicare and Medicaid Services/Joint Commission on Accreditation of Healthcare Organizations Aligned Measures](#)

MEASURE SET NAME

[Centers for Medicare and Medicaid Services/Joint Commission on Accreditation of Healthcare Organizations Aligned Acute Myocardial Infarction Measures](#)

DEVELOPER

Centers for Medicare and Medicaid Services  
Joint Commission on Accreditation of Healthcare Organizations

ENDORSER

National Quality Forum

INCLUDED IN

National Healthcare Disparities Report (NHDR)  
National Healthcare Quality Report (NHQR)

ADAPTATION

Measure was not adapted from another source.

RELEASE DATE

2000 Aug

REVISION DATE

2002 Aug

MEASURE STATUS

This is the current release of the measure.

SOURCE(S)

Acute myocardial infarction core performance measures. In: Specifications manual for national implementation of hospital core measures. Oakbrook Terrace (IL): Joint Commission on Accreditation of Healthcare Organizations (JCAHO); 2002 July. p. AMI-1 to AMI-9-6.

Center for Medicare and Medicaid Services (CMS). 7th statement of work (SOW). Quality of care measure specifications: Acute myocardial infarction (AMI). Baltimore (MD): Center for Medicare and Medicaid Services (CMS); 2002 Aug 1. Various p.



## MEASURE AVAILABILITY

Centers for Medicare and Medicaid Services (CMS)

The individual measure, "AMI-3: ACEI for LVSD," is published in "Centers for Medicare/Medicaid Services, 7th Statement of Work, Quality of Care Measure Specifications: Acute Myocardial Infarction (AMI)."

For more information, e-mail CMS PROINQUIRIES at [proinquiries@cms.hhs.gov](mailto:proinquiries@cms.hhs.gov).

Joint Commission on Accreditation of Healthcare Organizations (JCAHO)

The individual measure "ACEI for LVSD," is published in "Specifications Manual for National Implementation of Hospital Core Measures." Information is available from the [Joint Commission on Accreditation of Healthcare Organizations \(JCAHO\) Web site](http://www.jcaho.org). For further information refer to [www.jcaho.org](http://www.jcaho.org).

## COMPANION DOCUMENTS

Centers for Medicare and Medicaid Services (CMS)

A software application designed for the collection and analysis of quality improvement data, the CMS Abstraction and Reporting Tool (CART), is available from the [CMS CART Web site](http://www.cms.gov). Supporting documentation is also available.

For more information, e-mail CMS PROINQUIRIES at [proinquiries@cms.hhs.gov](mailto:proinquiries@cms.hhs.gov).

Joint Commission on Accreditation of Healthcare Organizations (JCAHO)

The following are available:

- Joint Commission on Accreditation of Healthcare Organizations (JCAHO). Overview of the acute myocardial infarction (AMI) core measure set. [internet]. Oakbrook Terrace (IL): Joint Commission on Accreditation of Healthcare Organizations (JCAHO); 2002 Mar 22 [cited 2002 Nov 13]. [4 p]. This document is available from the [Joint Commission on Accreditation of Healthcare Organizations \(JCAHO\) Web site](http://www.jcaho.org).
- Joint Commission on Accreditation of Healthcare Organizations (JCAHO). A comprehensive review of development and testing for national implementation of hospital core measures. [internet]. Oakbrook Terrace (IL): Joint Commission on Accreditation of Healthcare Organizations (JCAHO); 2002 [cited 2002 Nov 13]. [8 p]. This document is available from the [JCAHO Web site](http://www.jcaho.org).
- Joint Commission on Accreditation of Healthcare Organizations (JCAHO). Attributes of core performance measures and associated evaluation criteria. [internet]. Oakbrook Terrace (IL): Joint Commission on Accreditation of Healthcare Organizations (JCAHO); 2002 [cited 2002 Nov 13]. [4 p]. This document is available from the [JCAHO Web site](http://www.jcaho.org).
- Joint Commission on Accreditation of Healthcare Organizations (JCAHO). Information on final specifications for national implementation of hospital core measures as of 11/04/02. [internet]. Oakbrook Terrace (IL): Joint Commission on Accreditation of Healthcare Organizations (JCAHO); 2002 Nov 04 [cited 2002 Nov 13]. [10 p]. This document is available from the [JCAHO Web site](http://www.jcaho.org).

## NQMC STATUS

This NQMC summary was completed by ECRI on February 7, 2003. The information was verified by the Centers for Medicare/Medicaid Services and the Joint Commission on Accreditation of Healthcare Organizations on February 12, 2003.

## COPYRIGHT STATEMENT

Centers for Medicare and Medicaid Services (CMS)  
No copyright restrictions apply.

Joint Commission on Accreditation of Healthcare Organizations (JCAHO)  
The Specifications Manual for National Implementation of Hospital Core Measures, [Version 1.06, July 2002] is the intellectual property of and copyrighted by the Joint Commission on Accreditation of Healthcare Organizations, Oakbrook Terrace, Illinois. It is used in this publication with the permission of the Joint Commission.

© 2004 National Quality Measures Clearinghouse

Date Modified: 11/1/2004

The logo for FIRSTGOV, with "FIRST" in blue and "GOV" in red, and a small red star above the "I".

